Interacción entre el uso y la adicción a las redes sociales y teléfonos móviles entre estudiantes universitarios

Interaction between the use of and addiction to social media and mobile phones among university students

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Resumen: El objetivo del presente estudio es analizar los principales usos de las redes sociales entre hombres y mujeres, de acuerdo con las horas diarias de uso y la conducta adictiva de las redes sociales. Se aplicó un cuestionario de adicción a las redes sociales a una muestra de 466 participantes. Del total, el 60.5% eran mujeres y el 39.5% eran hombres. Se informaron diferencias significativas en el modelo lineal entre los usos principales y el comportamiento adictivo y las horas de uso. Además, se encontró una relación significativa entre el uso, la adicción a las redes sociales y los teléfonos móviles en hombres y mujeres. En conclusión, existen diferencias específicas entre los usos principales con el comportamiento adictivo y las horas diarias de uso. Aunque la popularidad del uso de las redes sociales aumenta significativamente, los factores de riesgo del uso poco saludable también aumentan.

Palabras clave: Adicción, Redes Sociales, Móvil, Género, Jóvenes.

Abstract: The objective of the present study is to analyze the main uses of social media among men and women, according to the daily hours of use and the addictive behavior to social media. A questionnaire of addiction to social media was applied to a sample of 466 participants. Of the total, 60.5% were women and 39.5% were men. Significant differences were reported in the linear model between the main uses and the addictive behavior and the hours of use. In addition, a significant relationship was found between the use, addiction to social media and to mobile phones in men and women. In conclusion, there are specific differences between the main uses with addictive behavior and the daily hours of use. Although the popularity of the use of social media increases significantly, the risk factors of unhealthy use also increase.

Keywords: Addiction, Social Media, Mobile Phone, Gender, Young People.

1. Introduction

1.1. Internet Addiction

During the last decades, information and communication technologies (ICTs) have been a precursor of innovations that have emerged in society thanks to the connectivity and interactivity they offer [1] [2]. These technologies have mainly influenced young people who have incorporated them in their training, socialization and entertainment, especially everything related to the Internet [3] [4] [5]. Regarding the use of ICTs, the mode that has increased its popularity is social media, known to be virtual communities where profiles are created and individuals can interact with other people, being mainly used to maintain contact with others and share things [4] [6].

However, despite the fact that technology offers benefits for young people, it also has involved negative aspects. An example that has been reported and investigated in recent years is addictive behavior or Internet addiction [7] [8]. It is considered an addiction when there is excessive use, loss of control, withdrawal symptoms, tolerance, and negative repercussions in daily life, associated with loss of control, sleep deprivation, carelessness, and loss of interest in other activities, decrease of physical activity, attention focus, as well as anxiety to stay connected [9] [10]. Among the explanations of addiction is the biopsychosocial perspective by Griffiths that takes into consideration both psychosocial components, focused from the cognitive-behavioral and socio-cognitive model, and biological components, focused from the neuroscientific perspective [11] [12] [13].

The study about Internet addiction has found relationships with some factors such as the presence of comorbid psychiatric symptoms, the specific use of Internet applications, and demographic elements such as age [14]. Although it has not been recognized as a disorder established in the review of the Diagnostic and Statistical Manual of Mental Disorders (DSM), it has been considered as a behavioral problem of particular growth among adolescents and young people [15] [16]. Currently, there are still debates about the term addiction, so other terms have been used to describe the phenomenon, including: problematic, compulsive or pathological use [17]. Unlike addictions to substances, the Internet offers many benefits in our society, being a necessary element today. This is why the extent of the impact due to the complex diagnosis is just starting to be understood [18] [19].

1.2. Addictive behavior to social media and problematic use of Mobile phone

Addictive behavior to social media is considered as a subtype of Internet addiction, sharing its characteristics with the use of digital social media [20]. Among the main warning signs that they share with Internet addiction are sleep deprivation, neglect of important activities, loss of the notion of time, and constant thoughts about what is happening in the social media, among others. [8] [9]. Social media is considered the main internet activity of Internet users in Mexico, so it is important to distinguish their study. The Internet user population has increased significantly, especially among young people. In 2017, the average daily connection to Internet time was 8 hours and 1 minute, 47 minutes more than the previous year, so its increase has been significant in recent years. A total of 79% of Internet users access social media; Facebook, WhatsApp, Youtube, and Twitter being the most popular [21].

Some authors distinguish different subtypes of Internet addiction [22]. It seems that the main characteristics between the different media could differentiate some important aspects related to addictive behavior. For example, a strong relationship has been found between Internet addiction and addiction to social media, however, extraversion is a specific characteristic that is frequently shown among social media users [23]. Some authors even make the observation to differentiate between adaptation and technological addiction, questioning whether the excessive use of social media could cause serious consequences, just as other types of Internet addiction such as video games [22].

However, some questions also arise regarding technology addiction. It is considered that the use of technology is rather a means that allows people to practice particular behaviors, such as the use of social media. Therefore, the dependence on social media is related to its content and not to the technology itself [24] [25].

The use of the mobile phone and being attached to it represents the person cognitively and behaviorally, with characteristics of constant thought and use, being similar to a behavioral addiction but without pathologization consequences [26]. The use of mobile devices is considered as a possible predictor of Internet addiction, since easy connectivity to the Internet is related to the increase of interest and excessive use, being able to produce a greater dependence than the use of the computer [2] [9] [13] [27] [28] [29] [30].

1.3. Present study

Internet access devices in Mexico have been changing priority over the years. According to the Asociación de Internet MX [21], 90% of Mexican Internet users are mobile phone users, the mobile being the most popular device. Laptops are used by 73% and desktop computers by 42%, while tablets are used by 52% of Mexican Internet users. Adolescents and young people are the main Internet and social media users, representing 39% of all Mexican Internet users [21].

Although the phenomenon is a subject that has brought the attention of researchers, there is still a lot to study in this area. A common limitation found among the studies about social media is that many researches have focused only on Facebook, taking it as a synonym of social media, leaving out other social media that may be important to the population [11]. In the same way, sometimes the term addiction is not clear, considering excessive use and addiction as part of the same phenomenon. The differentiation between engagement or non-pathological use could be a way to help answer the questions about addiction to social media [12]. It has been found that frequent use is not necessarily a predictor of addictive behavior, although it may be one of the risk factors that produces the phenomenon [24] [31]. The present study aims to analyze the main uses of social media between men and women, according to their daily hours of use and their addictive behavior to social media in order to know the panorama that implies its use. It is expected that differences will be found between uses and genders.

2. Method

2.1. Participants

The sample consisted of 466 participants with an average age of 19.80 (SD = 1.77), 60.5% were female (282) and 39.5% male (184). The main social media reported as used by the participants were: WhatsApp (59.4%), Facebook (31.1%), Twitter (3.5%) and Youtube (3%). Among the main uses and activities in social media were: interacting with friends (37.4%), entertainment (16.7%), interacting with their partner (13.4%), and with classmates (10.6%). Subjects were selected as they met the inclusion criteria. As inclusion criteria, young people were required to be between 18 and 24 years of age, who at the time of the application were university students, who were users of social media, and who agreed to participate through informed consent.

2.2. Instruments

The instrument used was the Social Media Addiction (SMA) questionnaire of Escurra y Salas [32]. It is a scale that consists of 24 Likert-type items with a range of 5 points (from 1 "never" to 5 "always"). The instrument is designed to evaluate the addiction to social media in university students; it includes items such as "I feel a great need to stay connected to social media" and "I feel anxious when I cannot connect to social media." Most of the items had the same direction, except for item 13, "I can disconnect from social networks for several days", so it was reversed to measure the items in the same direction and have a total score. The total internal consistency of the scale was α = .93, so it is considered to have excellent reliability.

Mobile Phone Problem Use Scale (MPPUS-10) was originally created by Bianchi and Phillips [33] and adapted to its short version by Foerster, Roser, Schoeni and Röösli [34]. The short version consists of 10 Likert-scale items with a range of ten points, ranging from "not entirely true" to "extremely true". The items are related to the tolerance of the mobile phone, withdrawal syndrome, evasion, and negative consequences in life. The scale was adapted to Spanish by López-Fernández, Honrubia-Serrano and Freixa-Blanxart [35]. Due to the adaptation

to this language, the writing of the items was adapted for a better understanding for our sample (for example, the word cell phone was used instead of mobile). It includes items such as "I find it difficult to turn off my cell phone" and "My friends and family complain because I use the cell phone a lot." The internal consistency of the instrument in the present study was α = .88, which is why it is considered reliable due to its high consistency.

To measure the daily hours of social media use, the items were added within the sociodemographic data: "How many hours do you estimate that you dedicate to your social media?". The main uses were measured by the question "What is the main use that you give to your social media?", offering different options and including the option "other" to respond openly.

2.3. Procedure

Students were invited to participate in the survey with prior authorization from the universities. The questionnaire was applied through an online platform. The general objectives of the study were explained and they were given instructions on how to access and respond to the survey. The first page obtained the informed consent allowing the participants to accept or reject in order to respond to the survey. Once the participants agreed, they could begin to answer the questions. The participants had to answer all the questions before finalizing the survey. The anonymity of their answers was guaranteed. The research and ethical aspects were approved by the corresponding committee.

2.4. Data analysis

At first, the measurement of each one of the variables was indicated by the sum and average of the items of the scales through the statistical software SPSS. The adjustment of the distributions to a normal curve was contrasted by the test of Kolmogorov-Smirnov. After the review of the normality adjustment analysis and descriptive data of the sample, non-parametric Mann-Whitney test analysis was perfomed to analyze the comparison between males and females and Kruskal-Wallis test to compare the main uses of social media. Secondly, it is analyzed by means of a general linear model comparing daily hours of use, addictive conduction to social networks and problematic use of mobile among the main uses of social networks and sex. Finally, Spearman's nonparametric Rho correlation was used to analyze the relationship between the variables of interest. Also, linear regression analysis was perfomed.

3. Results

First, reliability and normality analysis of the scales was performed (see Table 1). The scale of addiction to social media had an excellent consistency (α = .94), however, the distribution did not adjust to a normal curve (ZK-S = .06, p <.01). After the analysis, an average of 2.36 (SD = .70) was reported in the total score. On the other hand, the hours dedicated to social media reported was 7.11 hours (SD = 4.68); it did not adjust to a normal curve either (ZK-S = .16, p <.01). Finally, to analyze the age range, an average of 19.80 years of age was reported (SD = 1.77), without adjusting to a normal curve (ZK-S = .20 p <.01).

Table 1. Descriptive statistics and normality test.

	Total		Female		Male		Z
	M	SD	M	SD	M	SD	K-S
1	2.36	0.71	2.36	0.72	2.36	.71	.06*
2	7.11	4.68	7.57	4.72	6.39	4.51	.16*
3	4.16	1.92	4.03	1.91	4.37	1.93	.08*
4	19.80	1.77	19.66	1.71	20.01	1.84	.20*

1. SMA; 2. Hours of use; 3. MPPUS; 4. Age.
Range: SMA=1-5; MPPUS=1-10. Level of Significance * p < .01

In order to analyze if there are differences between the variables and gender, the non-parametric Mann-Whitney test was performed, since it did not fulfill a normal distribution. No significant difference was found in the addictive behavior between male and female (Z = - 102, p = .919), however a difference was reported in the daily hours of use (Z = -3.04, p <.01). Males reported fewer hours than females. Finally, the age difference was analyzed, finding that females averaged younger age than males (Z = -2.22, p <.01).

In order to analyze the different main uses regarding the use and addictive behavior of social media, the uses were divided in 11 different categories. It was necessary to reduce the categories where the type of use could overlap, so it was re-categorized as follows: The categories were divided into 1) using social media to maintain contact with their sentimental partner; 2) with your friends; 3) relatives; 4) with classmates and / or coworkers); 5) Share and express about your day to day activities; 6) meet people; 7) view content of your contacts; 8) watch entertainment content; 9) follow public figures; 10) carry out activities related to work; and 11) other uses. It was observed that the most popular uses reported by young people were: being in contact with friends (36.5%), followed by entertainment (16.3%), and being in contact with the sentimental partner (13.1%). Female and male participants reported a similar distribution among the main uses, agreeing with the Pearson Chi-square analysis to measure the relationship between categories and gender, reporting no statistically significant difference (χ2 [10] = 14.06, p =. 17).

3.1. Main uses of social media and its interaction with daily hours of use and gender

The young people who reported the most hours of daily use reported *sharing and expressing themselves* as the main use of social media, in addition to *following celebrities, brands*, or *products*. Females who spent more time on social media showed *sharing* and *expressing themselves* as their main use, *following celebrities* and *meeting people*; male results were *see content*, *follow products or celebrities* and *share and express themselves*. The uses that involved spending less daily hours were being in contact with family, colleagues and other uses. Females agreed with these uses, however males reported *meet people*, *work* and *other uses* (see Table 2).

Table 2. Hours of daily use according to the main uses of social media.

Use	Female		Male		Total	
	M	SD	M	SD	M	SD
1. Partner	8.26	4.79	6.48	4.03	7.59	4.57
2. Friend	8.14	4.79	6.60	4.92	7.53	4.89
3. Family	5.50	3.44	5.57	4.08	5.52	3.52
4. Classmates	6.21	4.37	5.42	4.30	5.90	4.31
5. Express	11.0	6.84	7.33	6.56	9.84	6.80
6. Meeting	9.00	5.66	4.14	3.63	5.22	4.29
7. Contacts	7.46	5.11	8.11	6.37	7.73	5.52
8. Enterteinment	6.93	3.74	7.12	4.03	7.01	3.84
9. Public Figures	10.5	7.78	8.00	-	9.67	5.69
10. Work	8.50	5.92	4.22	1.48	5.93	4.30
11. Others	4.67	2.78	5.33	4.16	4.83	2.98
Total	7.57	4.72	6.39	4.52	7.10	4.68

Since normality in the distribution was not achieved, the nonparametric test of Kruskal Wallis was performed to analyze the difference between the categories. Significant differences were found in the main uses of social media and addictive behavior (χ2 [10] = 19.57, p <.05). A generalized linear model was used to analyze the hours of daily use and the variables gender and main uses of social media using the inter-subject effects test (see Figure 1). Significant differences were reported in the corrected model (F [21] = 1.79, p <.05, R2 = .078), reporting a moderate effect size through the Eta square analysis (η2 = .078). Interception was significant (F [1] = 304.37, p <.001, η2 = .407). There was no significant interaction between the main use factors and gender (F [1] = 0.76, p

= .65, η2 = .017), because the use variable did not have an effect on the daily hours (F [10] = 1.36, p = .198, η2 = .030). The tendency of women to report more daily hours of use than men was in the activities of sharing and expressing themselves, meeting people, following public figures and work (F [1] = 4.06, p <.05, η2 = .030).
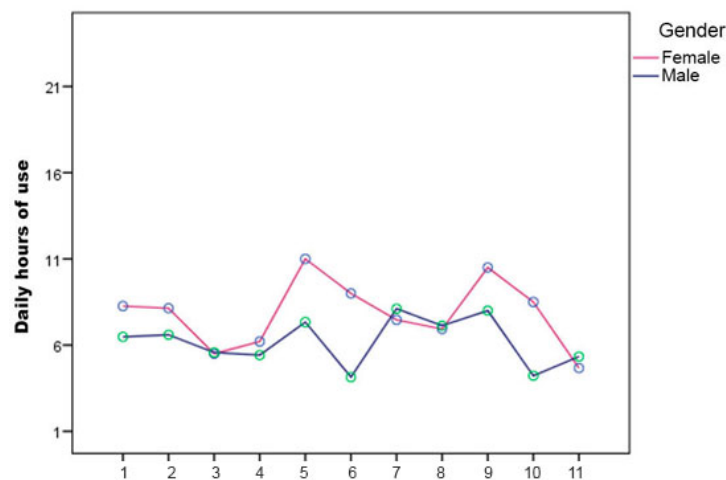

Figure 1. Comparison by gender of the daily hours of use according to the main uses of social media.

3.2. Main uses of social media and their interaction with addictive behavior and gender
In order to analyze the differences between the main uses, the addictive behavior and gender, the descriptive analyzes were performed first. The main use that reported the highest score in the addiction scale to social media was meeting people through social media, followed by viewing content from their contacts, and sharing and expressing themselves. Females reported higher scores on the scale of addictive behavior to social media in sharing and expressing themselves, meeting people and seeing content. In contrast, males reported higher scores in meeting people, entertainment and viewing content. The uses with the lowest scores were those of contact with family and companions, in addition to the category of other uses, for both male and female (see Table 3).

Table 3. Addictive behavior to social media according to the main uses.

Use	Female		Male		Total	
	M	SD	M	SD	M	SD
1. Partner	2.14	.59	2.16	.53	2.15	.57
2. Friend	2.41	.68	2.41	.71	2.41	.69
3. Family	1.97	.57	2.41	.71	2.07	.62
4. Classmates	2.11	.63	1.94	.51	2.04	.59
5. Express	3.07	.94	2.33	.60	2.84	.90
6. Meeting	3.04	.41	3.03	.42	3.03	.40
7. Contacts	3.01	.64	2.55	1.04	2.82	.83
8. Enterteinment	2.40	.68	2.56	.76	2.47	.71
9. Public Figures	2.71	.24	2.21	-	2.54	.33
10. Work	2.73	.84	2.14	.71	2.38	.79
11. Others	1.89	.59	1.93	.82	1.90	.61
Total	2.36	.72	2.36	.71	2.36	.71

The nonparametric test of Kruskal Wallis was performed to analyze the difference between the categories. Significant differences were found in the main uses of social media and addictive behavior (χ2 [10] = 50.21, p <.001). It was analyzed using a generalized linear model to measure the inter-subject effect test between the

addictive behavior to social media and gender, and main uses of social media (see Figure 2). Significant differences were reported in the corrected model (F [21] = 3.52, p <.001, R2 = .143), reporting a moderate effect size through the analysis of Eta square (η2 = .143). Interception was also significant (F [1] = 1660.27, p <.001, η2 = .789). There was no significant interaction between the main use factors and gender (F [10] = 1.42, p = .17, η2 = .031). This is due to the fact that the gender variable did not have an effect on the addictive behavior to social media (F [1] = 1.88, p = .17, η2 = .004), however it did have a significant effect with the different uses (F [10] = 4.39, p <.001, η2 = .09).
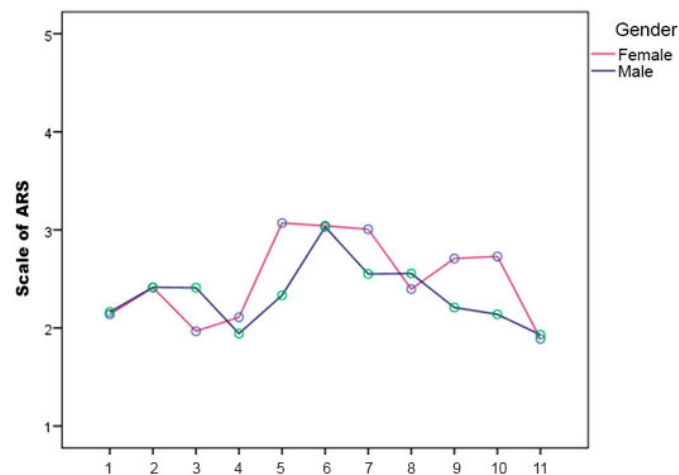

Figure 2. Comparison by gender of the average of the Social Network Addiction scale according to the main uses.

3.3. Main uses of social media and their interaction with the problematic mobile use

To analyze the differences between the main uses and the problematic mobile use between both genders, the descriptive analysis was performed. The main use that reported the highest score was the content of their contacts, followed by the use to meeting people. Females and males reported higher scores on the scale of addictive behavior to social media in meeting people and viewing contact content (see Table 4).

Likewise, the nonparametric test of Kruskal Wallis was performed to analyze the difference between the different uses. Significant differences were found between the main uses of social networks and problematic mobile phone use (χ2 [10] = 46.15, p <.001). It was analyzed using a generalized linear model to measure the inter-subject effect test between the addictive behavior to social media and the variables gender and main uses of social media (see Figure 3). Significant differences were found in the corrected model (F [21] = 2.76, p <.001; R2 = .119), reporting a moderate size effect through the Eta square analysis (η2 = .119). Interception was also significant (F [1] = 683.13, p <.001, η2 = .615). No significant interaction was reported between the main use factors and gender (F [10] = 4.29, p = .95, η2 = .009). This is due to the fact that the gender did not have an effect on the mobile problematic use (F [1] = 0.06, p = .81, η2 = .001), however there was a significant effect with the different uses (F [10] = 4.29, p <.001, η2 = .09).

Since a normal distribution was not fulfilled, it was decided to analyze the relationship of the variables by Spearman's nonparametric Rho correlation analysis (see Table 5). First, the correlation of the variables in general was analyzed and finally analyzed divided by gender. There was a high and significant correlation between the addiction to social media and the mobile problematic use (rs = .75, p <.01), however the relationship with the daily hours of use was lower (rs = .38, p < .01 and rs = .28, p <.01). Females tended to have higher scores on the variables in relation to the daily hours of use.

Table 4. Addictive behavior to social networks according to the main uses.

| Use	Female		Male		Total	
	M	DE	M	DE	M	DE
1. Partner	3.76	1.48	3.82	1.79	3.78	1.58
2. Friend	4.19	1.96	4.50	1.88	4.31	1.93
3. Family	3.04	1.68	3.83	2.04	3.22	1.76
4. Classmates	3.45	1.61	3.32	0.91	3.40	1.37
5. Express	5.11	2.63	4.62	1.62	4.95	2.32
6. Meeting	6.10	1.27	5.78	1.34	5.86	1.25
7. Contacts	5.65	1.49	6.20	3.04	5.87	2.19
8. Enterteinment	4.19	1.99	4.59	1.78	4.37	1.90
9. Public figures	4.25	0.64	2.80	-	3.77	0.95
10. Work	3.93	1.80	3.60	2.31	3.73	2.05
11. Other	2.79	1.38	4.26	2.38	3.19	1.72
Total	4.03	1.91	4.37	1.93	4.16	1.92
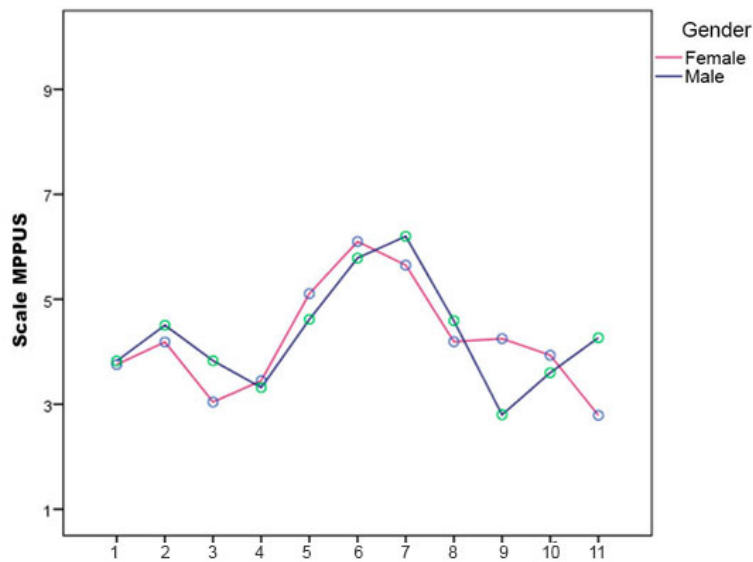
Figure 3. Relationship between the addictive behavior to social media, problematic mobile use and daily hours of use.

Table 5. Matrix of bivariate correlations using the Rho coefficient of Spearman.

		1	2
General	1. Daily hours of use	1	
	2. SMA	.38**	1
	3. MPPUS	.28**	.75**
Female	1. Daily hours of use	1	
	2. SMA	.42**	1
	3. MPPUS	.32**	.76**
Male	1 Daily hours of use	1	
	2. SMA	.31**	1
	3. MPPUS	.25**	.75**

Level of significance ** $p < .01$

Finally, a simple linear regression analysis was performed among the study variables where the addictive behavior to social media was the dependent variable. Both variables were significant predictors. The general regression model reported that the daily use hours explained 15% of the variance of addiction to social media and the problematic mobile use 77% of the variance. Regarding the analysis by gender, females reported higher prediction with daily hours, explaining 17% of the variance, in contrast to 13% of males (see Table 6).

4. Discussion

A descriptive analysis of the study variables was conducted. Regarding the psychometric properties, a high reliability was found according to the internal consistency of the social media addiction questionnaire. Regarding the average of the reported score, it was found that, although no addictive behavior was found, the reported score was close to the intermediate, so that some characteristics of the addictive behavior could be present. This agrees with the influence of social media nowadays, where young people incorporate it on a regular basis, resulting in some problematic behaviors such as attachment [12], without it becoming a pathological use. In the case of the daily use of social networks, an average of 7.11 hours was reported, supporting the hours that have been reported in Mexico [21].

Significant differences were found between the hours of use and gender; however, it was not reported in the addictive behavior. It has been reported in some studies that there is no difference between the frequency of use [36] [37], so one possible explanation is that females reported lower age in the sample mean, a factor that has an impact on the use of social media. Among the most popular uses of social networks were entertainment and being in contact with friends and partners, being similar between males and females. Regarding the main uses, this study agrees with other studies where interactivity with friendships is one of the preferred uses of young people [38] [39]. On the other hand, there were no significant differences between the uses, contrary to other studies where they found some differences between the use among males and females [36] [37].

Before data analysis, it was necessary to re-categorize the main uses to specifically identify the uses, without leaving aside some that could be differentiated, so that there were a total of 11 categories that would cover the uses reported by the young people. Among the most popular uses in general were to be in contact with friends, entertainment, and to be in contact with their partner. No significant difference was reported between uses and gender, the main uses being the same for both genders. Although there are studies that indicate some differences, it has also been found that both males and females use social media with similar purposes [39] [40].

One of the objectives of the study was to analyze the main uses in addictive behavior, daily hours of use and their interaction with both genders. The sample reported more addictive behavior, with the main use of knowing people. Those who did not report a specific activity reported the least addictive behavior score. On the other hand, females reported a greater number of connection hours than males. Both reported more daily hours dedicated to the activity of sharing and expressing themselves. Although interaction with friends and partners was one of the most popular uses, it did not report a greater number of connection hours or characteristics of addictive behavior than the other activities. Recent studies have found that the frequency of use is directly related to leisure activities, school / work activities and communication [41].

A difference was found among genders in the intensity of use but not in the addictive behavior. These results agree with other studies that have found that females are the most involved in social media activities and are those that use them most extensively and intensively [42] [43]. As previously reported, females spend more time on social media to express themselves and share, while males use it to meet people, so the trend of greater use of social media goes towards interactivity activities within of the virtual space [41] [42].

Finally, it was found that there was a significant correlation between the daily hours of use and addiction to social media and the problematic mobile use in males and females, reporting greater relationship strength in females. Thus, it seems that in women, more technological addiction can be determined based on the intensity of use. Likewise, we can also observe a small difference in the regression analysis. Previous studies have analyzed

this relationship between frequency of use and addiction, finding that the frequency of use does not determine the problematic use but it can be a predictor of it [31]. In addition, there has been a distinction between addictive behavior and excessive use, where psychopathological factors are a determinant of addiction [12] [44].

It is important to give the relevance of the impact of social networks on young people. Although the healthy use of social networks does not necessarily affect school performance, it can have an impact on daily activities in order to continue using social networks, even affecting daily sleep hours [45]. In addition, inappropriate use of social media has negative consequences in the academic, family and social nature [41]. These negative consequences can be a risk factor, related to the symptoms of addictive behavior [44] [46]. Moreover, addictive behavior of social media was related and predicted by the problematic use of mobile phone, so it is important to consider it as a risk factor [31] [47].

In conclusion, specific differences between the main uses, the addictive behavior, problematic use of mobile phone and the daily hours of use were found. Although there is still debate on whether the problematic use of social media should be included as a disorder associated to addiction and its psychopathological meaning [15] [17], there is scientific evidence that supports the presence of symptoms related to addiction [25]. Although the popularity of the use of social media increases significantly, risk factors also increase, also increasing unhealthy use and considering it a current public health problem [29] [48] [49]. Therefore, it is important to continue developing research, differentiating between addictive behavior and use of social media, and deepening the understanding of the characteristics that make up these behaviors. Excessive use has been considered as a non-pathological behavior, unlike addiction [12] [44].

It is important to continue investigating the use of social media and addictive behavior. It is essential to point out that one limitation of the study was that there were no open interviews or focus groups, so the qualitative and mixed approach is recommended for further research in order to have a better understanding of the phenomenon. Likewise, it is recommended to focus research on vulnerable populations and propose preventive and intervention programs to promote the healthy use of social media.

5. References

[1] Cho, H., Kwon, M., Choi, J. H., Lee, S. K., Choi, J. S., Choi, S. W., Kim, D. J. (2014). Development of the internet addiction scale based on the internet gaming disorder criteria suggested in DSM-5. *Addictive Behaviors*, 39 (9), 1361-1366. doi: https://doi.org/10.1016/j.addbeh.2014.01.020

[2] Mendoza. R. V., Baena, G. R., Baena, M. A. (2015). Un análisis de la adicción a los dispositivos móviles y su impacto en el rendimiento académico en los estudiantes de la licenciatura en informática administrativa del centro universitario UAEM Temascaltepec. *Revista Atlante: Cuadernos de Educación y Desarrollo*, (56), 1-20. Retrieved from: http://atlante.eumed.net/adiccion-moviles/

[3] Gómez, M., Roses, S., Farias, P. (2012). El uso académico de las redes sociales en universitarios. Comunicar: *Revista Científica de Comunicación y Educación*, 19 (38), 131-138. doi: https://doi.org/10.3916/C38-2012-03-04

[4] Kuss, D. J., Griffiths, M. D. (2011). Online social networking and addiction—a review of the psychological literature. *International Journal Of Environmental Research And Public Health*, 8 (9), 3528-3552. doi: https://doi.org/10.3390/ijerph8093528

[5] Young, P. A. (2008). Integrating culture in the design of ICTs. *British Journal of Educational Technology*, 39 (1), 6-17. doi: https://doi.org/10.1111/j.1467-8535.2007.00700.x

[6] Satici, S.A., Uysal, R. (2015) Well-being and problematic Facebook use. *Computers in Human Behavior*, 49, 185-190. doi: https://doi.org/10.1016/j.chb.2015.03.005

[7] Carbonell, X., Fúster, H., Chamarro, A., Oberst, U. (2012). Adicción a internet y móvil: una revisión de estudios empíricos españoles. *Papeles del Psicólogo*, 33 (2), 82-89. Retrieved from: http://www.papelesdelpsicologo.es/resumen?pii=2096

[8] Young, K. (1998). *Caught in the net: How to recognize the signs of internet addiction and a winning strategy for recovery*. New York, U.S.: John Wiley & Sons.

[9]   Echeburúa, E., de Corral, P. (2010). Addiction to new technologies and to online social networking in young people: A new challenge. *Adicciones*, 22 (2), 91-96. doi: https://doi.org/10.20882/adicciones.196

[10] Griffiths, M. (2005). A components model of addiction within a biopsychosocial framework. *Journal Of Substance Use*, 10 (4), 191-197. doi: https://doi.org/10.1080/14659890500114359

[11] Griffiths, M. D. (2013). Social networking addiction: Emerging themes and issues. *Journal Of Addiction Research & Therapy*, 4 (5), 118-119. doi: http://dx.doi.org/10.4172/2155-6105.1000e118

[12] Turel, O., Serenko, A. (2012). The benefits and dangers of enjoyment with social networking websites. *European Journal of Information Systems*, 21 (5), 512-528. doi: https://doi.org/10.1057/ejis.2012.1

[13] Se-Hoon, J., HyoungJee, K., Jung-Yong, Y., Yoori, H. (2016). What type of content are smartphone users addicted to?: SNS vs. games. *Computers In Human Behavior*, 54, 10-17. doi: https://doi.org/10.1016/j.chb.2015.07.035

[14] Kuss, D.J., Shorter, G.W., van Rooij, A.J., van de Mheen, D., Griffiths, M.D. (2014). The Internet addiction components model and personality: Establishing construct validity via a nomological network. *Computers in Human Behavior*, 39, 312-321. doi: https://doi.org/10.1016/j.chb.2014.07.031

[15] Lam, L. T. (2014). Risk factors of internet addiction and the health effect of internet addiction on adolescents: A systematic review of longitudinal and prospective studies. *Current Psychiatry Reports*, 16 (11), 1-9. doi: https://doi.org/10.1007/s11920-014-0508-2

[16] Parra, V., Vargas, J.I., Zamorano, B., Peña, F., Velázquez, Y., Ruiz, L., Monreal, O. (2016). Adicción y factores determinantes en el uso problemático del Internet, en una muestra de jóvenes universitarios. Edutec. *Revista Electrónica de Tecnología Educativa*, (56), 60-73. doi: https://doi.org/10.21556/edutec.2016.56.741

[17] Tonioni, F., D'Alessandris, L., Lai, C., Martinelli, D., Corvino, S., Vasale, M., Bria, P. (2012). Internet addiction: hours spent online, behaviors and psychological symptoms. *General Hospital Psychiatry*, 34 (1), 80-87. doi: https://doi.org/10.1016/j.genhosppsych.2011.09.013

[18] Young, K. (2010). Internet addiction over the decade: a personal look back. *World Psychiatry*, 9 (2), 91-91. doi: https://doi.org/10.1002/j.2051-5545.2010.tb00279.x

[19] Young, K. (2015). The evolution of internet addiction disorder. En C. Montag, M. Reuter, eds. *Internet Addiction* (pp. 3-17). Germany: Springer International Publishing. doi: https://doi.org/10.1007/978-3-319-46276-9_1

[20] Błachnio, A., Przepiórka, A., Pantic, I. (2015). Internet use, Facebook intrusion, and depression: Results of a cross-sectional study. *European Psychiatry*, 30 (6), 681-684. doi: https://doi.org/10.1016/j.eurpsy.2015.04.002

[21] Asociación de Internet MX. (2017). *13° estudio sobre los hábitos de los usuarios en internet en México 2017*. Retrieved from: https://www.asociaciondeinternet.mx/es/estudios

[22] Carbonell, X., Oberst, U. (2015). Las redes sociales en línea no son adictivas. *Aloma: revista de psicologia, ciències de l'educació i de l'esport Blanquerna*, 33 (2), 13-19. Retrieved from: https://www.raco.cat/index.php/Aloma/article/view/301478

[23] Müller, K. W., Dreier, M., Beutel, M. E., Duven, E., Giralt, S., & Wölfling, K. (2016). A hidden type of internet addiction? Intense and addictive use of social networking sites in adolescents. *Computers in Human Behavior*, 55, 172-177. doi: https://doi.org/10.1016/j.chb.2015.09.007

[24] Jasso, J. L., López-Rosales, F. (2018). *Conducta adictiva a las redes sociales en jóvenes. La Psicología Social en México Vol. XVII*. Mexico: AMEPSO.

[25] Kuss, D. J., Griffiths, M. D. (2017). Social networking sites and addiction: Ten lessons learned. *International journal of environmental research and public health*, 14 (3), 311. doi: https://doi.org/10.3390/ijerph14030311

[26] Walsh, S. P., White, K. M., Cox, S., Young, R. M. (2011). Keeping in constant touch: The predictors of young Australians' mobile phone involvement. *Computers In Human Behavior*, 27 (1), 333-342. doi: https://doi.org/10.1016/j.chb.2010.08.011

[27] Aragón, M., Mendoza, E., Márquez, G. (2016). Ciberadicción: Una aproximación bajo la perspectiva de la ingeniería. Revista Iberoamericana de *Producción Académica y Gestión Educativa*, 4, 1-35. Retrieved from: http://pag.org.mx/index.php/ PAG/article/view/555

[28] Basteiro, J., Robles-Fernández, A., Juarros-Basterretxea, J., Pedrosa, I. (2013). Adicción a las redes sociales: creación y validación de un instrumento de medida. *Revista de Investigación y Divulgación en Psicología y Logopedia*, 3 (1), 2-8. Retrieved from: https://www.ridpsiclo.ull.es/index.php/ridpsiclo/article/view/35

[29] García, J. A. (2013). Adicciones tecnológicas: El auge de las redes sociales. *Health and addictions: salud y drogas*, 13 (1), 5-14. doi: http://dx.doi.org/10.21134/haaj.v13i1.188

[30] Orsal, O., Orsal, O., Unsal, A., Ozalp, S. S. (2013). Evaluation of internet addiction and depression among university students. *Procedia-Social And Behavioral Sciences*, 82, 445-454. doi: https://doi.org/10.1016/j.sbspro.2013.06.291

[31] Jasso, J. L., López-Rosales, F., Díaz-Loving, R. (2017). Conducta adictiva a las redes sociales y su relación con el uso problemático del móvil. *Acta de Investigación Psicológica*, 7 (3), 2832-2838. doi: https://doi.org/10.1016/j.aipprr.2017.11.001

[32] Escurra, M., Salas, E. (2014). Construcción y validación del cuestionario de adicción a redes sociales (ARS). *Liberabit*, 20 (1), 73-91. Retrieved from: http://www.scielo.org.pe/scielo.php?script=sci_arttext&pid=S1729-48272014000100007&lng=es&tlng=es

[33] Bianchi, A., Phillips, J. G. (2005). Psychological predictors of problem mobile phone use. *CyberPsychology & Behavior*, 8 (1), 39-51. doi: http://doi.org/10.1089/cpb.2005.8.39

[34] Foerster, M., Roser, K., Schoeni, A., Röösli, M. (2015). Problematic mobile phone use in adolescents: derivation of a short scale MPPUS-10. *International Journal of Public Health*, 60 (2), 277-286. doi: https://doi.org/10.1007/s00038-015-0660-4

[35] López-Fernández, O., Honrubia-Serrano, M. L., Freixa-Blanxart, M. (2012). Adaptación española del "Mobile Phone Problem Use Scale" para población adolescente. *Adicciones*, 24 (2), 123-130. doi: https://doi.org/10.20882/adicciones.104

[36] Colás, P. (2013). Juventud y redes sociales: Motivaciones y usos preferentes. *Comunicar*, 20 (40),15-23. doi: https://doi.org/10.3916/C40-2013-02-01

[37] Rial, A., Gómez, P., Braña, T., Varela, J. (2014) Actitudes, percepciones y uso de Internet y las redes sociales entre los adolescentes de la comunidad gallega (España). *Anales de Psicología*, 30 (2), 642-655. doi: https://doi.org/10.6018/analesps.30.2.159111

[38] Caldevilla, D. (2010). Las Redes Sociales. Tipología, uso y consumo de las redes 2.0 en la sociedad digital actual. *Documentación de las Ciencias de la Información*, 33, 45. Retrieved from: https://www.researchgate.net/publication/279657056_Las_Redes_Sociales_Tipologia_uso_y_consumo_de_las_redes_20_en_la_sociedad_digital_actual

[39] Domínguez, F., López, R. (2015). Uso de las redes sociales digitales entre los jóvenes universitarios en México. Hacia la construcción de un estado del conocimiento (2004-2014). *Revista de Comunicación*, (14), 48-69. Retrieved from: https://revistadecomunicacion.com/pdf/2015/Art048-069.pdf

[40] Alonso-Ruido, P., Rodríguez-Castro, Y., Lameiras-Fernández, M., Carrera-Fernández, M. V. (2015). Hábitos de uso en las Redes Sociales de los y las adolescentes: análisis de género. *Revista de Estudios e Investigación en Psicología y Educación*, 13, 054-057. doi: https://doi.org/10.17979/reipe.2015.0.13.317

[41] Colmenares, L. E., Carrillo, M., Jiménez, F., Hernández, J. L. (2017). Problemas generados por el uso de la tecnología en los universitarios. *Revista de Investigación en Tecnologías de la Investigación (RITI)*, 5 (10), 12-18. Retrieved from: http://www.riti.es/ojs2018/inicio/index.php/riti/article/view/6

[42] Maier, C., Laumer, S., Eckhardt, A., Weitzel, T. (2015). Giving too much social support: social overload on social networking sites. *European Journal of Information Systems*, 24 (5), 447-464. doi: https://doi.org/10.1057/ejis.2014.3

[43] McAndrew, F. T, Jeong, H. S. (2012). Who does what on Facebook? Age, sex, and relationship status as predictors of Facebook use. *Computers in Human Behavior*, 28 (6), 2359-2365. doi: https://doi.org/10.1016/j.chb.2012.07.007

[44] Jasso, J. L., López-Rosales, F. (2018). Measuring the relationship between social media use and addictive behavior and depression and suicide ideation among university students. *Computers in Human Behavior*, 87, 183-191. doi: https://doi.org/10.1016/ j.chb.2018.05.003

[45] Garate-Osuna, L. E.,Nava-Quevedo, A., Pacheco-Millán, C. (2015). Impacto de las redes sociales en el comportamiento de estudiantes de nivel superior. *Revista de Investigación en Tecnologías de la Información (RITI),* 3 (5), 19-23. Retrieved from: http://www.riti.es/ojs2018/inicio/index.php/riti/article/view/44

[46] Peña García, G. M. (2016). Adicción a Facebook en jóvenes universitarios del área de la salud de Mazatlán, Sinaloa. *Revista de Investigación en Tecnologías de la Investigación (RITI)*, 4 (7), 33-39. Retrieved from: http://www.riti.es/ojs2018/inicio/index.php/riti/article/view/105

[47] Peña García, G. M., Ley Peña, S. V., Castro Balsi, J. J., Madrid González, P. P., Apodaca Castro, F. J., Aceves Márquez, E. C. (2019). Predominio de las TIC y adicción a las redes sociales en estudiantes universitarios del área de salud. *Revista de Investigación en Tecnologías de la Investigación (RITI)*, 7 (13), 83-91. Retrieved from: http://www.riti.es/ojs2018/inicio/index.php/riti/article/view/157/html

[48] Brugal, M. T., Rodríguez-Martos, A., Villalbí, J. R. (2006). Nuevas y viejas adicciones: implicaciones para la salud pública. *Gaceta Sanitaria*, 20, 55-62. doi: https://doi.org/10.1157/13086027

[49] Jasso, J. L., Lopez, F., Gámez-Guadix, M. (2018). Assessing the links of sexting, cybervictimization, depression, and suicidal ideation among university students. *Archives of suicide research*, 22 (1), 153-164. doi: https://doi.org/10.1080/13811118.2017.1304304